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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,189	09/30/2003	Hoo Y. Chung	758.1149USD1	7104

7590 06/25/2004

Attn: Mark DiPietro  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, MN 55402-0903

EXAMINER

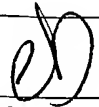
GREENE, JASON M

ART UNIT PAPER NUMBER

1724

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/676,189	CHUNG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jason M. Greene	1724	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-234 is/are pending in the application.
- 4a) Of the above claim(s) 1-200 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 201-234 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 201-234 in the reply filed on 01 April 2001 is acknowledged.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 201-234 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 201 and 207 recite "a fine fiber comprising..." in the preamble. However, claims 202-204, 208-211, and 214-215 recite "the media of claim 201" or "the media of claim 207" in the preamble. Therefore, it is not clear whether claims 201-215 are intended to be directed to a fine fiber or to a media comprising the fine fibers. As noted in the previous Office action, the Examiner has interpreted the claims as being directed

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to a filter media. If this interpretation is correct, the Examiner suggests Applicants amend the claims accordingly.

5. Claims 216 and 223 recite "a fine fiber comprising" in the preamble. However, the claims also recite "the substrate comprising a filtration media" in line 2. Therefore, it is not clear if claims 216-234 are intended to be directed to a fine fiber or to a filtration media comprising a layer of fine fibers. As noted in the previous Office action, the Examiner has interpreted the claims as being directed to a filtration media comprising a substrate and a fine fiber layer. If this interpretation is correct, the Examiner suggests Applicants amend the claims accordingly.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 201-204 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller et al.

Miller et al. discloses a filter media comprising fine fibers comprising a nylon 66 or a blend of two nylon polymers (e.g. nylon 66, nylon 610, nylon 6, nylon 11), the fine fiber having a fiber size (diameter) of 0.1 microns in Fig. 3 and col. 5, lines 25-49.

While Miller et al. does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Miller et al. will inherently possess the recited stability properties since the fine fibers of Miller et al. are formed from the same materials and have the same diameters as the claimed fine fibers.

8. Claims 207-211, 214, and 215 are rejected under 35 U.S.C. 102(e) as being anticipated by Healey.

Healey discloses a filter media comprising a substrate (12) and a layer of fine fibers (14), the fine fibers comprising an acrylic polymer and having a fiber size (diameter) of 0.1 microns in Fig. 1 and col. 6, lines 25-60, col. 8, lines 7-31, and col. 13, lines 8-23.

While Healey does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Healey will inherently possess the recited stability properties since the fine fibers of Healey are formed from the same materials and have the same diameters as the claimed fine fibers.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 205 and 206 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahlbaugh et al. '399 in view of Miller et al.

Kahlbaugh et al. '399 discloses a filter media comprising a layer of fine fibers, the layer having a thickness of 10 microns and the fine fibers comprising nylon and having a fiber size (diameter) of 0.1 microns in col. 12, lines 38-47 and col. 16, lines 48-64.

Kahlbaugh et al. '399 does not disclose the fine fibers comprising one of the recited polymers.

Miller et al. discloses a similar filter media comprising fine fibers comprising a nylon 66, the fine fiber having a fiber size (diameter) of 0.1 microns in Fig. 3 and col. 5, lines 25-49.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the nylon 66 of Miller et al. into the filter media of Kahlbaugh et al. '399 to provide a filter media having a fine fiber layer suitable for a specific application. Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the nylon 66 of Miller et al. for the nylon of Kahlbaugh et al. '399 in that such are alternate polymers in the art for

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forming a layer of fine fibers on a substrate, mere substitution of one fine fiber forming polymer for another in the art without a showing of unexpected or unobvious results being within the scope of one having ordinary skill in the art.

While Miller et al. does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Miller et al. will inherently possess the recited stability properties since the fine fibers of Miller et al. are formed from the same materials and have the same diameters as the claimed fine fibers.

11. Claims 212 and 213 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahlbaugh et al. '399 in view Healey.

Kahlbaugh et al. '399 discloses a filter media comprising a layer of fine fibers, the layer having a thickness of 10 microns and the fine fibers comprising nylon and having a fiber size (diameter) of 0.1 microns in col. 12, lines 38-47 and col. 16, lines 48-64.

Kahlbaugh et al. '399 does not disclose the fine fibers comprising one of the recited polymers.

Healey discloses a similar filter media comprising a substrate (12) and a layer of fine fibers (14), the fine fibers comprising an acrylic polymer and having a fiber size (diameter) of 0.1 microns in Fig. 1 and col. 6, lines 25-60, col. 8, lines 7-31, and col. 13, lines 8-23.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the acrylic polymer of Healey into the filter media of Kahlbaugh et al. '399 to provide a filter media having a fine fiber layer suitable for a

specific application. Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the acrylic polymer of Healey for the polymers of Kahlbaugh et al. '399 in that such are alternate polymers in the art for forming a layer of fine fibers on a substrate, mere substitution of one fine fiber forming polymer for another in the art without a showing of unexpected or unobvious results being within the scope of one having ordinary skill in the art.

While Healey does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Healey will inherently possess the recited stability properties since the fine fibers of Healey are formed from the same materials and have the same diameters as the claimed fine fibers.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).



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13. Claims 216 and 218-222 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With regard to claims 216, 218, 221, and 222, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filtration media comprising a substrate and a layer of fine fibers, the fine fibers comprising the reaction product of a polymer resin and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns and the layer of fine fibers having a thickness of 4 microns ( $8 \times 0.5$  microns), wherein greater than 30 percent of the fine fiber remains substantially unchanged after exposure to air at 140 °F and 100 percent relative humidity for 16 hours.

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

With regard to claims 219 and 220, claims 11 and 12 of U.S. Patent No. 6,716,274 B2 claims the crosslinking agent comprising polyacrylic acid and melamine formaldehyde.

14. Claim 217 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

15. Claims 223, 225, 226, and 231-234 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 in view of Dzenis et al.

With regard to claims 223, 225, 226, 233, and 234, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filtration media comprising a substrate and a layer of fine fibers, the fine fibers comprising the reaction product of a polymer resin and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns and the layer of fine fibers

having a thickness of 4 microns ( $8 * 0.5$  microns), wherein greater than 30 percent of the fine fiber remains substantially unchanged after exposure to air at 140 °F and 100 percent relative humidity for 16 hours.

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fibers being electrospun.

Dzenis et al. teaches electrospun fine fibers having diameters between 5 and 5000 nm (0.005 and 5.0 microns) in col. 8, line 18 to col. 9, line 38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the electrospun fine fiber forming process of Dzenis et al. into the filter media of claim 10 of U.S. Patent No. 6,716,274 B2 to provide fine fibers capable of performing in a specific environment.

With regard to claims 231 and 232, claims 11 and 12 of U.S. Patent No. 6,716,274 B2 claims the crosslinking agent comprising polyacrylic acid and melamine formaldehyde.

16. Claim 224 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2

and Dzenis et al. as applied to claim 223 above, and further in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

17. Claims 227-230 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 223 above, and further in view of Kahlbaugh et al. '399

Claims 10-12 of U.S. Patent No. 6,716,274 B2 does not claim the specific substrate material.

Kahlbaugh et al. '399 discloses a similar filter media comprising a substrate comprising a spun bonded polymeric non-woven fabric in col. 16, lines 10-17.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the substrate of Kahlbaugh et al. '399 into the filter media of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific application.

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Emig et al., Barris et al., and Chung et al. references disclose similar filter media.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene  
Examiner  
Art Unit 1724



jmg  
June 21, 2004

DUANE SMITH  
PRIMARY EXAMINER

  
6-24-04